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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,461	11/28/2001	Howard B. Sosin	2002832-0016	2420

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EXAMINER

LEGESSE, NINI F

ART UNIT PAPER NUMBER

3711

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/996,461

Applicant(s)

SOSIN, HOWARD B.

Examiner

Nini F. Legesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5-9,11-14 and 17-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,5-9,11-14 and 17-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

**Applicant's Request for Continued Examination is acknowledged on 06/07/04.**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 5, 7, 8, 9, 11, 12, 17, 18, 19, and 20** are rejected under 35 U.S.C. 102(b) as being anticipated by Shibahashi et al. (US Patent No. 4,681,791).

Shibahashi discloses a device comprising:

- **With respect to claim 1**, a substrate (3); and a plurality of fibers (1,2) protruding from the substrate (see Fig. 1), wherein the fibers include a thermochromic chromogen (refer to lines 3-4 of the abstract).
- **With respect to claims 5 and 19**, the chromogen is coated on the surface of the fibers (column 5, lines 11-12).
- **With respect to claim 7**, the fibers are composed of the chromogen (column 2, lines 55-56).

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- **With respect to claim 8**, the chromogen is encapsulated (column 3, lines 64-65 indicate that the thermochromic pigments could be encapsulated).
- **With respect to claim 9**, a substrate (3); and a plurality of fibers (1,2) protruding from the substrate (see Fig. 1), wherein the fibers respond to an increase in temperature by changing from a first color to a second color (column 1, lines 5-7), the first color and the second color being visually distinguishable (column 4, lines 17-60).
- **With respect to claim 11**, a substrate (3); and a plurality of fibers (1,2) protruding from the substrate (see Fig. 1), wherein the fibers respond to a change in chemical environment by changing from a first color to a second color (column 3, lines 1-5 indicate that a reversible thermochromic activity due to electron transfer), the first color and the second color being visually distinguishable (column 4, lines 17-60).
- **With respect to claims 12 and 17**, the change in color is substantially reversible (column 4, lines 23-25).
- **With respect to claim 18**, a substrate (3); and a plurality of fibers (1,2) protruding from the substrate (see Fig. 1), wherein the fibers include a chemically chromic chromogen (column 3, lines 1-5 indicate that a reversible thermochromic activity due to electron transfer and also examples 1-31 on column 9-19 show different chemical composition of the thermochromic material).
- **With respect to claim 20**, a substrate (3); and a plurality of fibers (1,2) protruding from the substrate (Fig. 1), wherein the fibers respond to an

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elastic elongation by changing from a relaxed color to an elongated color (the fiber element of Shibahashi is inherently capable of elastic elongation because for example, as indicated in column 9, line 26, the carpets, rugs or mats are cited as textile materials wherein the fiber element is inherently capable of being elastically elongated when being impacted by feet. It should be noted when the mat or the rug is impacted by the foot it will inherently have an elastic elongation and the impact will provide the temperature of that specific impacted area of the mat to rise and this will cause to change the color of the impacted area. See MPEP 2111-2113).

**Claims 1 and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson Jr. (US Patent No. 4,681,791).

Johnson discloses a device comprising:

- **With respect to claim 1**, a substrate and a plurality of fibers (column 9, lines 3-8 indicate the use of a thermochromic material in baseball. And it is noted that a baseball field has ground area that could be considered as a substrate and the grass or the artificial turf that usually covers the ground area of a baseball field could be identified as fibers). And column 3, lines 31-33 indicate that the thermochromic material could be sprayed on the surface.
- **With respect to claim 14**, for example boundary lines 12, 14, 16, 18, 22, and 24 are indicia for marking the boundaries of a tennis court (see Fig. 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibahashi.

Shibahashi discloses the invention as recited above but he fails to explicitly state if the chromogen is included within the core of the fiber. However as shown on his 31 examples (see column 9-19) Shibahashi teaches that the thermochromic element could be made out of different compositions and in his column 3, line 62+ he teaches that the thermochromic pigment could be applied in various ways. And it appears from Applicant's disclosure on page 4 that the chromogen may be applied onto the fiber in a lot of various known methods. It should be noted that this claim appears to disclose method of making but what is claimed is a product. Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to apply the chromogen element onto or into the fiber in any known method in order to provide a thermochromic product that is capable of reversibly changing color with temperature.

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**Claims 13, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibahashi in view of Johnson, Jr. (US Patent No. 5,394,824). Shibahashi discloses the invention as recited above but fails to show indicia for determining the position of a golf ball, and indicia for marking the boundaries of a sports field. Johnson teaches the use of indicia for marking the boundaries of a sports field (see items 12, 14, 16, 18, 24, 26 and so on Fig. 1). Even though Johnson does not show a golf playing area wherein indicia is used for determining the position of a golf ball he indicates that many other types of sports (see column 9, 3-5) could utilize his invention. Thus, it would have been obvious to one of ordinary skill in the art to provide different types of indicia for different types of sport field in order to match the type of sport to be played at a given field and having an indicia for a ball position or an indicia for marking the boundaries of a sports field will help a player because the indicia could be used as a reference point and the presence of an indicia could help a player to visualize his game or could help a player practice better.

**Claims 21-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibahashi.

Shibahashi does not disclose expressly if the fibers comprise or compose poly (diacetylene). At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use poly (diacetylene) because Applicant has not disclosed that the use of poly (diacetylene) provides an advantage, is used for a particular purpose, or solves a

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stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either any of Shibahashi's multiple examples (as discussed from column 9 to column 19) of a thermochromic compositions because many different types of thermochromic composition perform the same function of reversibly changing color of elements with temperature. Therefore, it would have been an obvious matter of design choice to modify Shibahashi's reference to obtain the invention as specified in claims 21-23.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nini F. Legesse whose telephone number is (703) 605-1233. The examiner can normally be reached on 9:30 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vidovich Greg can be reached on (703) 308-1513. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Nini F. Legesse

07/07/04